

- 1 What is claimed is:
- 2 1. A method for concurrently processing digital video frames and high resolution
- 3 still images in burst mode, comprising:
- 4 acquiring with high priority video frames and high resolution still images in burst
- 5 mode from one or more image sensors;
- 6 storing with high priority the video frames and the high resolution still images in
- 7 raw format in a memory during acquisition of the high resolution still images in burst
- 8 mode;
- 9 processing with low priority the video frames stored in the memory using a video
- 10 pipeline; and
- 11 processing with low priority the high resolution still images acquired during the
- 12 burst mode using a high resolution still image pipeline, wherein the high resolution still
- 13 image pipeline runs concurrently with the video pipeline.
- 14 2. The method of claim 1, wherein the acquiring step includes acquiring the video
- 15 frames and the high resolution still images in real time.
- 16 3. The method of claim 1, wherein the storing step includes storing the video frames
- 17 and the high resolution still images in real time.
- 18 4. The method of claim 1, further comprising downsampling the high resolution still
- 19 images to be inputted into the video pipeline.
- 20 5. The method of claim 1, wherein the processing the high resolution still images
- 21 step includes processing the video frames and the high resolution still images into a
- 22 standard format by an image/video transcoding agent.
- 23 6. The method of claim 1, wherein the processing the video frames step comprises:
- 24 downsampling and demosaicing the video frames; and
- 25 color correcting the video frames.
- 26 7. The method of claim 1, wherein the processing the high resolution still images
- 27 step comprises:
- 28 downsampling and demosaicing the high resolution still images using complex
- 29 demosaicing algorithms; and
- 30 color correcting the high resolution still images using complex color correction
- 31 algorithms.
- 32 8. The method of claim 1, further comprising compressing the video frames and the
- 33 high resolution still images.
- 34 9. A joint video and still image pipeline for a video camera system, comprising:

- 1 one or more image sensors capable of concurrently acquiring with high priority
- 2 video frames and high resolution still images in burst mode;
- 3 a sensor controller capable of storing with high priority the video frames and the
- 4 high resolution still images acquired during the burst mode in raw format into a memory;
- 5 and
- 6 one or more processors capable of concurrently processing with low priority the
- 7 video frames and the high resolution still images acquired during the burst mode, wherein
- 8 the video frames are processed using a video pipeline, and the high resolution still images
- 9 are processed using a high resolution still image pipeline, and wherein the video pipeline
- 10 runs concurrently with the high resolution still image pipeline.
- 11 10. The joint video and still image pipeline of claim 9, wherein the high resolution
- 12 still images are downsampled to be inputted into the video pipeline.
- 13 11. The joint video and still image pipeline of claim 9, further comprising an
- 14 image/video transcoding agent capable of processing the video frames and the high
- 15 resolution still images into standard format.
- 16 12. The joint video and still image pipeline of claim 9, wherein the video frames and
- 17 the high resolution still images are acquired and stored in real time with high priority.
- 18 13. The joint video and still image pipeline of claim 9, wherein the video frames and
- 19 the high resolution still images acquired during the burst mode are processed with low
- 20 priority.
- 21 14. The joint video and still image pipeline of claim 9, wherein the processors are
- 22 selected from a microprocessor, an application specific integrated circuit (ASIC), and a
- 23 digital signal processor.
- 24 15. The joint video and still image pipeline of claim 9, wherein the processors
- 25 downsample, demosaic, and color correct the video frames.
- 26 16. The joint video and still image pipeline of claim 9, wherein the processors
- 27 downsample, demosaic, and color correct the high resolution still images using complex
- 28 algorithms.
- 29 17. A computer readable medium providing instructions for concurrently processing
- 30 digital video frames and high resolution still images in burst mode, the instructions
- 31 comprising:
- 32 acquiring with high priority video frames and high resolution still images in burst
- 33 mode from one or more image sensors;

1 storing with high priority the video frames and the high resolution still images in
 2 raw format in a memory during acquisition of the high resolution still images in burst
 3 mode;

4 processing with low priority the video frames stored in the memory using a video
 5 pipeline; and

6 processing with low priority the high resolution still images acquired during the
 7 burst mode using a high resolution still image pipeline, wherein the high resolution still
 8 image pipeline runs concurrently with the video pipeline.

9 18. The computer readable medium of claim 17, wherein the instructions for acquiring
 10 include instructions for acquiring the video frames and the high resolution still images in
 11 real time.

12 19. The computer readable medium of claim 17, further comprising instructions for
 13 downsampling the high resolution still images to be inputted into the video pipeline.

14 20. The computer readable medium of claim 17, wherein the instructions for
 15 processing the high resolution still images include instructions for processing the video
 16 frames and the high resolution still images into a standard format by an image/video
 17 transcoding agent.